

CLAIMS

1. An internal combustion engine including a cylinder head with an intake port for use in supplying air or a mixture of fuel and air into a combustion chamber, comprising:
 - 5 a fuel mixing means inserted into the intake port, the fuel mixing means having a stream-disturbing body with a plurality of vanes formed thereon for disturbing a stream passing through the intake port.
2. The internal combustion engine according to Claim 1,
 - 10 wherein the fuel mixing means further comprises:
 - a hollow cylindrical support ring fixedly inserted into the intake port;
 - a support rib extending radially inwardly from an inner surface of the support ring;
 - a hub having a through-bore and an outer surface fixed to the support rib such that the through-bore is arranged in the same direction as the hollow of the support ring; and
 - 15 a support shaft inserted and supported in the through-bore of the hub, and
 - wherein the stream-disturbing body is supported by the support shaft, and the plurality of vanes are formed on an outer surface of the stream-disturbing body.
3. The internal combustion engine according to Claim 2,
 - 20 wherein the support ring includes a guide vane extending radially inwardly from the inner surface thereof.
4. The internal combustion engine according to Claim 2,
 - 25 wherein the support shaft is inserted and supported rotatably in the through-bore of the hub.
5. The internal combustion engine according to Claim 2, further comprising:
 - 30 a hollow cylindrical support ring extension member inserted into the intake port such that a flange formed on one end of the support ring extension member is engaged with an inlet of the intake port, the support ring extension member having the other end coupled

to an end of the support ring that is opposite to another end of the support ring adjacent to the combustion chamber.

6. The internal combustion engine according to Claim 2,

5 wherein the stream-disturbing body is rotatably supported on the support shaft.

7. The internal combustion engine according to Claim 6,

wherein the support shaft comprises an extension portion having one end fixed to the support rib, and a bent portion bent at and extending from the other end of the 10 extension portion, the bent portion having a diameter less than that of the extension portion, and the stream-disturbing body is rotatably supported by the bent portion.

8. The internal combustion engine according to any one of Claims 2 to 7, further comprising:

15 an auxiliary stream-disturbing body rotatably supported on the support shaft and having a plurality of vanes formed thereon.

9. The internal combustion engine according to Claim 8,

wherein the auxiliary stream-disturbing body takes the shape of a hollow cylinder 20 and has the vanes formed on an inner surface thereof, and an inner diameter of the auxiliary stream-disturbing body including the vanes is larger than an outer diameter of the stream-disturbing body including vanes.

10. The internal combustion engine according to Claim 8,

25 wherein each of the vanes of the stream-disturbing body and the auxiliary stream-disturbing body has a spiral shape, and helixes of the vanes of the auxiliary stream-disturbing body and the stream-disturbing body are formed in opposite directions.

11. The internal combustion engine according to Claim 8, further comprising:

30 a cylindrical rim formed to surround radially outward ends of the plurality of

vanes of at least one of the stream-disturbing body and the auxiliary stream-disturbing body.

12. The internal combustion engine according to Claim 1,

5 wherein the fuel mixing means further comprises a bearing installed at an inlet of the intake port,

the stream-disturbing body takes the shape of a hollow cylinder and has a plurality of vanes formed on an inner surface thereof, the stream-disturbing body having one end supported rotatably by the bearing and the other end inserted into the intake port.

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13. The internal combustion engine according to Claim 1,

wherein the fuel mixing means further comprises:

a hollow cylindrical support ring inserted into the intake port such that a flange formed on one end of the support ring is caught at an inlet of the intake port; and

15 a bearing fixed to an inner surface of the support ring, and

wherein the stream-disturbing body takes the shape of a hollow cylinder and has a plurality of vanes formed on an inner surface thereof, the stream-disturbing body being supported rotatably by the bearing.

20 14. The internal combustion engine according to Claim 12 or 13, further comprising:

a support rib extending radially inwardly from an inner surface of the stream-disturbing body;

25 a hub having a through-bore and an outer surface fixed to the support rib such that the through-bore is arranged in the same direction as the hollow of the stream-disturbing body;

a support shaft fixedly inserted into the through-bore of the hub; and

an auxiliary stream-disturbing body supported by the support shaft and having a plurality of vanes formed on an outer surface thereof.

30 15. The internal combustion engine according to Claim 14,

wherein the support shaft is inserted and supported rotatably in the through-bore of the hub.

16. The internal combustion engine according to Claim 14,

5 wherein the auxiliary stream-disturbing body is supported rotatably on the support shaft.

17. The internal combustion engine according to Claim 14,

10 wherein an outer diameter of the auxiliary stream-disturbing body including the vanes is less than an inner diameter of the stream-disturbing body including the vanes.